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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/784,057	02/16/2001	Michio Asukabe	202593US0	4856
22850	7590	03/31/2004		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER PADGETT, MARIANNE L	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 03/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/784,057

Applicant(s)

Asukabe et al

Examiner

M.L. Padgett

Group Art Unit

1762

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☒ Responsive to communication(s) filed on 11/7/03 & 10/3/03
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 13, 15-20, 24-25 & 27 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 13, 15-20, 24-25 & 27 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some* ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____
- ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Interview Summary, PTO-413
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other _____

Office Action Summary

Art Unit: 1762

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/7/03 has been entered.

As noted in the interview summary of 12/2/03, the after final amendment of 10/3/03 as well as that submitted with the RCE transmittal of 11/7/03 were intended to be entered, as is consistent with the claims of 11/7/03

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

Art Unit: 1762

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 13, 15-20, 24-25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nezu et al (5,817,718), in view of Kono (6,235,143), optionally with Goldberg (5,804,263) or Hubbard et al (6,368,677) as applied in paper# 10 (mailed 1/17/03) and further discussed in paper# 14, mailed (7/7/03), and further considering Iwasaki et al (5,213,722) or Hostettler et al (5,919,570), or Rogers et al (5,187,028).

The claims have been amended to required that the oxidative plasma comprise both oxygen and Ar, and it is noted that the air plasma taught in Kono on col. 7 inherently (comprises) includes both O₂ and Ar. The references to Goldberg et al or Hubbard et al do not explicitly require use of both these gases, so are only optionally included for their relevant teaching that show further motivation as previously discussed. Note Goldberg et al teach plasma activation and /or oxidation of polyolefin's or fluorocarbon polymer, but never explicitly uses Ar + O₂ together (see Ex 3, col. 13, where they are separately used in separate plasma treatments, and col. 4, lines 25-28 that notes subsequent exposure after plasma to air or O₂, may affect oxidative reactions to functionalized the surface. In Hubbard et al, col. 5, lines 35-65, examples 7, 13, and claims 2-3 teach corona discharge or plasma to oxidize polymeric materials as claimed or in Kono or Nezu et al, but not specify gases uses nor functional groups produced. Thus, while not teaching the now claimed Ar + oxygen plasma, either Goldberg (263) or Hubbard et al still suggest the equivalency of oxidative plasma treatments of polyolefin or fluorinated polyolefin's as previous discussed.

The patents to Iwasaki et al (col. 5, lines 8-15 and 42-45 and col. 8, lines 23-38) or Hostettler et al (col. 18, line 60-col. 19, line 15; col. 22, lines 1-21) or Rogers et al (col. 2, lines 62-68; col. 5, lines 55-68; the example in col. 5, and claim 13), all show that plasma comprising oxygen and Ar, such as air are

Art Unit: 1762

old and well known to cause functionalization that produces hydroxyl and/or carbonyl groups, hence shows that Kono's air plasma would have been expected to inherently produce functionalization as claimed, thus confirming the previously argued equivalence air-plasma and electron beam pretreatments of polymeric films to enable subsequent graft polymerization as practice in Nezu et al and claimed by applicant.

Note in Iwasaki et al, polyolefins, such as polypropylene, are suggested to be surface treated to form hydrophilic groups, such as $-OH$ and $-COOH$ (col. 5, or 8), where plasma atmosphere "may be air and an inert gas such as argon, nitrogen or the like". In Hostettler et al very hydrophobic plastics, such as polyethylene are taught be oxygen plasma treated, as with O_2 , $O_2 + Ar$, or $O_2 + air$, etc., so as to produce functional groups, consisting of hydroxyl groups, carbonyl groups, carboxyl group of mixture thereof, for subsequent reactions. Rogers et al is providing wettable porous fabric substrates, such as polyethylene fluorocarbon polymers and polypropylene via plasma/corona discharge (they are used interchangeably through the specification), where use of air is said to introduce unsaturated $C=C$ bonds and carbonyl groups into the surface. Any of these 3 references show the expected results of Kono's air plasma in the process of Nezu et al (718), would have been the production of functional groups as claimed:

4. Other art of interest for showing the effect and use of corona and O-plasmas includes Paul et al (col. 3, line 58-col. 4, line 11) and Shanouilian et al (col. 10, line 10-41); or Onishi et al (col. 10, lines 11-30; col. 11, lines 4-25; col. 13, lines 26-39, etc), who also teach graft polymerization thereafter, does not explicitly use Ar and O_2 in the same plasma, but explains the mechanism by which the two elements may produce relevant functionalization.

5. Claims 13, 15-20, 24-25 and 27 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 6-7, 11-13, 15-16 and 19-21 of U.S. Patent No. 6,242, 123B1 in view of Kono et al, and further in view of Iwasaki or Hostettler et al or

Art Unit: 1762

Rogers et al that show the effects of plasmas as taught by Kono et al. See section 7 of paper # 10, and the above discusses on of inherency/obviousness.


6. Applicant's arguments with respect to claims 13, 15-20,24-25 and 27 have been considered but are moot in view of the new ground(s) of rejection.

7. Any inquiry concerning this communication should be directed to Marianne L. Padgett at telephone number (571) 272-1425 on M-F from about 8:30 am - 4:30 pm, & FAX#(703) 872-9306 (all official).

M. L. Padgett/af

March 5, 2004

March 25, 2004



MARIANNE PADGETT
PRIMARY EXAMINER